

Amendment to the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (Original) A sonar antenna comprising an axially symmetric acoustic surface having the cross-sectional form of a generally U-shaped curve of non constant curvature; wherein the curve is shaped to allow continuous coherent ensonification such that the power in the echo returned from a uniform flat sea floor is substantially constant.

2. (Original) A sonar antenna according to claim 1, wherein the curve is catenary, hyperbolic or parabolic.

3. (Original) A sonar antenna according to claim 2, wherein the curve has the form:

$$y(x) = (\cosh(Ax) - 1) / A$$

where x is across, y is vertical and A is constant.

4. (Currently Amended) A sonar antenna according to ~~any preceding claim~~ claim 1, wherein the U-shape cross-section of the acoustic surface extends unchangingly in the axial direction.

5. (Currently Amended) A sonar antenna according to ~~any preceding claim~~ claim 1, wherein there is one acoustic surface for both transmitting and receiving.

6. (Currently Amended) A sonar antenna according to ~~any one of claims 1 to 4~~ claim 1, wherein there are separate acoustic surfaces for transmission and reception, and both have the same U-shaped cross-section.

7. (Currently Amended) A sonar antenna according to ~~any preceding claim~~ claim 1, wherein a transmitting transducer is arranged with a single transmitting aperture extending over the entire transmitting surface.

8. (Currently Amended) A sonar antenna according to ~~any one of claims 1 to 6~~ claim 1, wherein, there are a plurality of transmitting transducers each having the same U-shaped cross-section and stacked together in the axial direction.

9. (Currently Amended) A sonar antenna according to ~~any preceding claim~~ claim 1, wherein a plurality of receiving transducers are strung together and arranged along the U-shaped receiving surface.

10. (Original) A sonar antenna according claim 9, where the transducers are arranged contiguously along the surface.

11. (Original) A sonar antenna according claim 9, where the transducers are arranged spaced apart along the surface.

12. (Original) A sonar antenna according claim 9, wherein not all the transducers are employed.

13. (Currently Amended) A vessel equipped with a sonar antenna according to ~~any preceding claim~~ claim 1, where the sonar antenna is mounted coaxially along its undersurface.